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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/009,802	01/20/1998	SEAN MCCARTHY	1855.2067-000	7895

21005 7590 04/21/2005

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133

EXAMINER	
GUZO, DAVID	

ART UNIT	PAPER NUMBER
1636	

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/009,802	MCCARTHY, SEAN	
	Examiner	Art Unit	
	David Guzo	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *61-88* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *61-88* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *1/28/05;1/20/98* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/14/04;8/17/00*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

The Substitute Drawings filed 1/28/05 are acceptable.

Claims 61-88 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific or substantial asserted utility or a well established utility.

This rejection is maintained for reasons of record in the previous Office Action (Mailed 7/26/04) and for reasons outlined below.

Applicant traverses this rejection by asserting essentially the same arguments made in the response filed 5/12/04. The examiner responded fully to these arguments in the previous Office Action (mailed 7/26/04). However, several new points of applicant's arguments will be addressed here.

Applicant argues that the examiner is improperly requiring applicant to disclose how the invention works in order to establish a patentable utility for the claimed invention.

Applicant's arguments filed 1/28/05 have been fully considered but they are not persuasive. The examiner is not requiring applicant to disclose how the invention works. The examiner is only applying the standards for determining whether applicant has demonstrated a specific, substantial or well established utility for the claimed invention. As asserted by the examiner in the previous Office Action, applicant's disclosure of a possible involvement of CRSP proteins in some aspect of signal transduction or regulation of gene transcription in a cell involved in development or differentiation

without a disclosure of any specific biological properties of the claimed molecules, without a disclosure of the gene target(s) of the CRSP2 in any cell, without a disclosure of effects of CRSP2 on any specific gene transcription in any cell, without any disclosure of involvement of CRSP-2 in any specific regulation of a gene encoding a development or differentiation specific protein, etc. does not represent a practical real world use for the claimed molecules wherein said use **provides a benefit in a currently available form**. Clearly, additional further research would be required to ascertain a real world use for the claimed invention.

Applicant cites *In re Brana* and *In re Kimmel* to assert that the standard the examiner is applying under 35 USC 101 is improper. Applicant asserts that like the applications in *Brana* and *Kimmel*, applicant's specification contains a presumptively correct assertion of utility of CRSP-2 which may be generic (i.e. compounds having "antitumor" activity without disclosing any activity against specific tumors, as disclosed in *Brana*) and that no further disclosure is required to meet the utility requirement.

In response, the examiner notes that the facts in the cited cases and the instant application are quite different. In contrast to the facts in *Brana*, for example, the CRSP-2 molecules have no disclosed real world activity. Applicant merely indicates that CRSP-2 may be involved in some manner in signal transduction or regulation of unspecified gene expression, etc. and provides no disclosure of any **specific** biological activity associated with the claimed molecules. In contrast, the antitumor compounds claimed in *Brana* had higher antitumor activity than related compounds known to have

antitumor activity and applicants provided declaratory evidence that the compounds had activity *in vivo* against tumors in a mouse model.

The seminal decision interpreting the utility requirement of 35 USC 101 is *Brenner v. Manson*, 383 US 519, 148 USPQ 689 (1966). The Brenner court noted that "[t]he basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility. Unless and until a process is refined and developed to this point – **where specific benefit exists in currently available form** (emphasis added) – there is insufficient justification for permitting an applicant to engross what may prove to be a broad field." at 534-35, 148 USPQ at 695. In the instant case, applicant does not demonstrate any biological activity associated with CRSP-2 and applicant only asserts that the CRSP-2 is involved in some undisclosed fashion in signal transduction, etc. This asserted utility is clearly not substantial or specific and specific benefit does not exist in a currently available form.

Claims 61-88 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific or substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

This rejection is maintained given the lack of a specific, substantial or well established utility.

If applicant, during the prosecution of this application, overcomes the above 101 and associated 112, 1st paragraph, enablement, rejection, the following enablement rejections also apply for reasons of record in the previous Office Action and reasons outlined below.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 61, 78-85 and 88 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

This rejection is maintained for reasons of record in the previous Office Action and for reasons outlined below.

Applicant traverses the rejection (with regard to claim 61) by amending the claim to recite biological activities for CRSP-2 and by asserting that assays for assessing these activites were known in the art at the time the application was filed and hence the skilled artisan could practice the claimed invention without undue experimentation. Applicant traverses this rejection (with regard to claims 78-85, 87) by asserting that the skilled artisan could easily select at least 10, 25, 50, etc. consecutive amino acids of SEQ ID NO:5 or any cystine-rich regions of SEQ ID NO:5 and produce a polypeptide

that comprises the selected sequences using any suitable method. Applicant asserts that the skilled artisan could use the polypeptides to produce antibodies to CRSP-2 for detection and/or purifying CRSP-2. Applicant traverses the rejection of claim 88 by asserting that the specification provides sufficient guidance with regard to formulation and administration of the CRSP-2 proteins to enable the skilled artisan to make and use the CRSP-2 proteins as pharmaceutical agents.

Applicant's arguments have been considered but are not persuasive. With regard to claim 61, since applicant does not know what **specific** biological activities CRSP-2 actually has, it is unclear how the skilled artisan would identify compounds that modulate the activity of CRSP-2. Essentially, the skilled artisan would need to conduct further trial and error research to determine what biological activities CRSP-2 participates in so as to identify compounds that modulate the activities of CRSP-2. This type of experimentation is the antithesis of routine experimentation since it involves significant inventive research.

With regard to claims 78-85, it is clear that the skilled artisan could make the claimed polypeptides as said polypeptides have no activity recited in the claims. With regard to use of the polypeptides to generate antibodies usable to detect or purify the CRSP-2 protein, it must be considered that the only polypeptides which would have this activity are those which are identical to SEQ ID NO:5. For example, the claim could read on a polypeptide of 500 amino acids in length with only 10 consecutive amino acid residues of SEQ ID NO:5. It is highly unlikely that this polypeptide could be used to generate antibodies specific for CRSP-2 because a small epitope contained in a larger

molecule would probably not be in a conformation which would resemble the conformation of the epitope in the naturally occurring CRSP-2 molecule. Also, use of the CRSP-2 or portions of CRSP-2 to generate antibodies is not an enabled use because the skilled artisan would not know how to use the CRSP-2 protein (see the above utility rejection under 35 USC 101) identified, or purified, by the antibodies.

With regard to claim 88, it is unclear how the skilled artisan can use a pharmaceutical composition comprising the CRSP-2 protein when the skilled artisan does not know what (if any) disease condition(s) is associated with expression of CRSP-2. Essentially, in order to use the claimed pharmaceutical composition, the skilled artisan would need to conduct further research to determine what biological activities CRSP-2 possesses, conduct further research to determine whether CRSP-2 expression is involved in any disease condition, conduct further research to determine whether administration of CRSP-2 or portions of CRSP-2 can treat any disease condition associated with CRSP-2 expression, etc. Clearly, this amount of inventive research would not be routine; instead, it would involve making significant discoveries concerning the activities of CRSP-2 and the role, if any, of CRSP-2 in disease conditions.

Claim 87 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a fusion polypeptide comprising the polypeptide of claims 62, 66, 68 and 72-76 and a non-CRSP polypeptide, does not reasonably provide enablement for a fusion polypeptide comprising an isolated polypeptide

comprising at least 10 consecutive amino acids of SEQ ID NO:5 operably linked to a non-CRSP polypeptide. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

This rejection is applied to Claim 87 for the reasons outlined in the above 35 USC 112, 1st paragraph rejection of claims 61, 78-85 and 88.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 61-69, 76-77 and 87-88 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

This rejection is necessitated by applicant's amendment.

Applicant claims isolated polypeptide sequences at least 80% or 90% identical to SEQ ID NO:5 or portions of SEQ ID NO:5 or polypeptides encoded by nucleic acid sequences 80% or 90% identical to SEQ ID NO: 6 , pharmaceutical compositions comprising said polypeptides, fusion polypeptides comprising said sequences and a method of identifying a compound that modulates the activity of a protein having CRSP-2 activity wherein the polypeptides are recited as being capable of modulating signal

transduction, regulating cellular proliferation and/or regulating gene transcription in a cell involved in development or differentiation. The claims read on a genus of polypeptides having the recited activities and a method of identifying a compound that modulates the activity of said polypeptides. Applicant discloses a single example of a CRSP-2 protein (from humans).

The written description requirement for a genus may be satisfied by sufficient description of a representative number of species by actual reduction to practice or by disclosure of relevant identifying characteristics, i.e. structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show that applicant was in possession of the claimed invention. In the instant case, neither applicant nor the prior art teaches the relevant identifying characteristics of the CRSP-2 protein that are essential for its function. Neither applicant nor the prior art discloses the CRSP-2 motifs essential for activity of the protein, neither applicant nor the prior art teaches conserved and non-conserved regions and the relevance of the conserved and non-conserved regions to CRSP-2 activity. Given the broad scope of the claims, given the absence of a disclosure correlating structure of the CRSP-2 protein and its biological functions and given the absence of a disclosure of CRSP-2 proteins form other species, it must be considered that the skilled artisan would not consider that the single species of CRSP-2 disclosed by applicant represents a representative number of species sufficient to describe the claimed genus.

With regard to the Supplemental Information Disclosure Statement (SIDS) filed June 14, 2004, a copy of the PTO-1449 form is included as an attachment to this Office Action. With regard to the acknowledgement of consideration of references cited in the IDS filed 10/29/98 and 12/20/99, it appears that examiner Yucel did consider said references and initialed the PTOL-1449 forms. Apparently the initialed 1449 forms were not mailed with the Office Action of 11/6/00. Copies of the initialed 1449 forms are included as an attachment to this Office Action.

No Claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Guzo, Ph.D., whose telephone number is (571) 272-0767. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Irem Yucel, Ph.D., can be reached on (571) 272-0781. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Guzo
April 16, 2005

DAVID GUZO
PRIMARY EXAMINER